



MPART PFAS Town Hall

The Webinar will Begin Shortly

April 14, 2021

MPART

Webinar Housekeeping



All lines are muted during the webinar.



We are recording this webinar

East Bay Township

MPART PFAS Town Hall

Abigail Hendershott, MPART Executive Director

Michigan PFAS Action Response Team

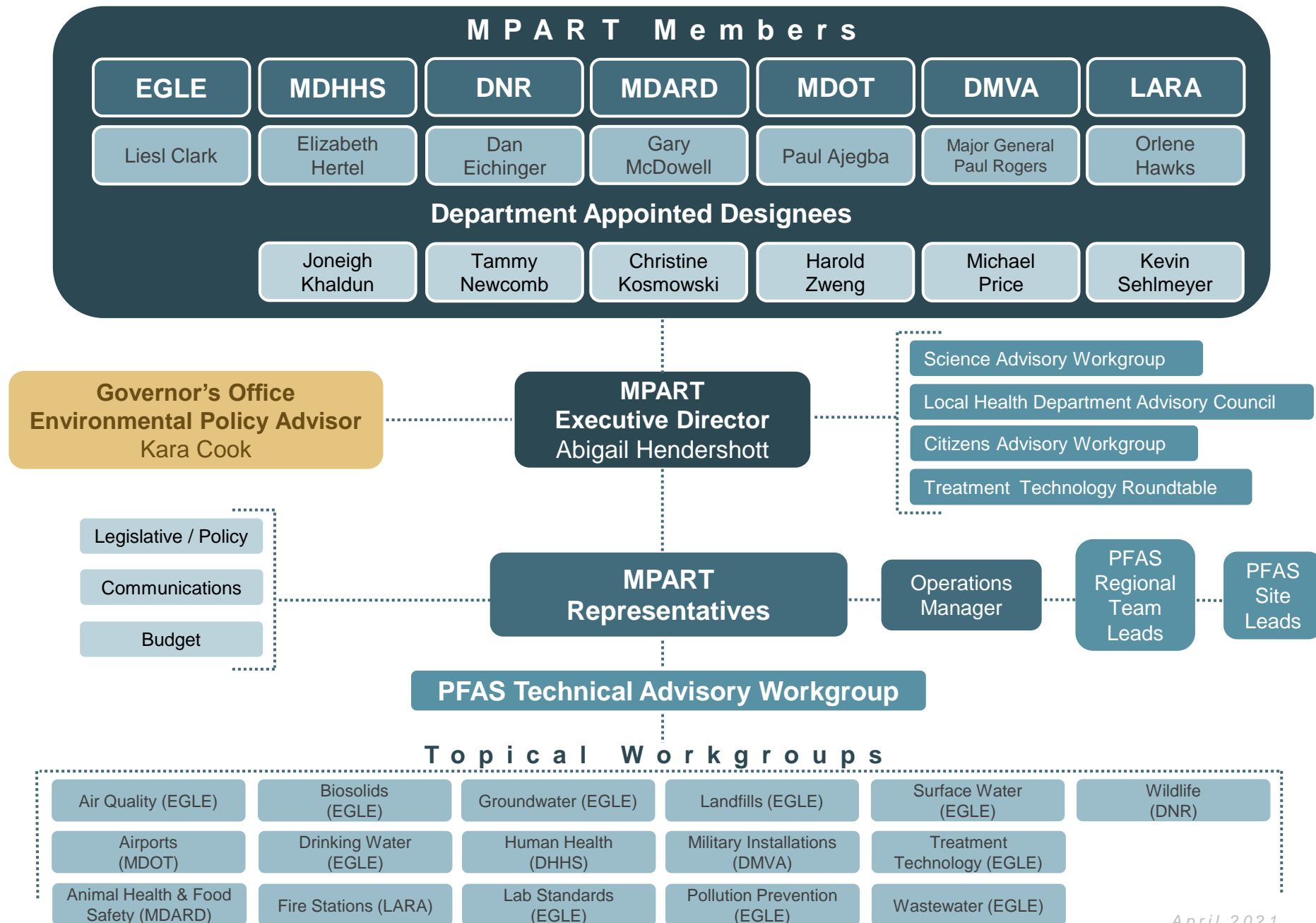
(616) 888-0528

HendershottA@Michigan.gov

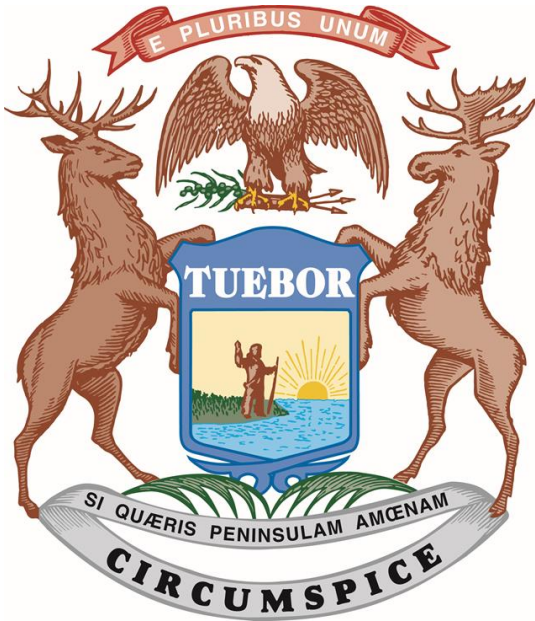
Introductions, Logistics and Agenda

- Introduction/Housekeeping – EGLE Les Smith and Abby Hendershott
- MPART Overview – Abby Hendershott
- PFAS Site Investigation – Ann Emington, EGLE
- Health and PFAS – Rosa Jaiman, MDHHS
- Status of Connecting Homes to Municipal Water – Beth Friend, East Bay Township Supervisor
- US Coast Guard Air Station Summary – Jeremy Hall and Gregory Carpenter, USCG
- Cherry Capital Airport Summary – Kevin Klein, Airport Director, Adam Segerlind, Gosling Czubak
- MPART Website

MPART Coordination Structure



Michigan PFAS Action Response Team (MPART)



- Executive Order 2019-03
- Unique Multi-Agency Approach
- Leads Coordination and Cooperation Among All Levels of Government
- Directs Implementation of State's Action Strategy

Groundwater Cleanup Criteria

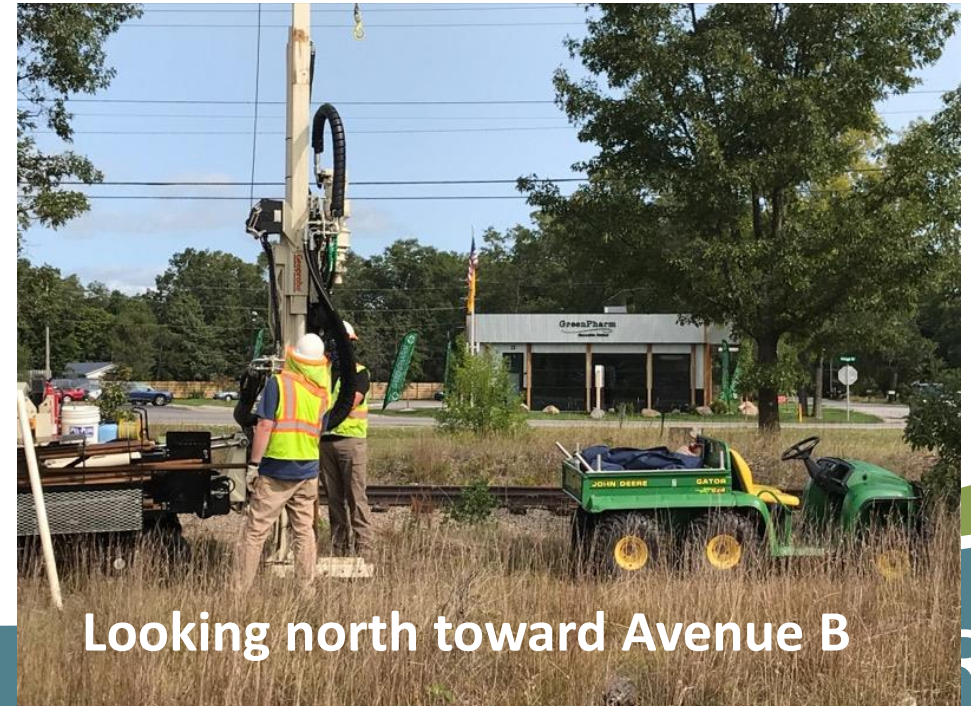
Compound	Effective 12/21/20
PFOA	8 ppt
PFOS	16 ppt
PFNA	6 ppt
PFHxS	51 ppt
HFPO-DA	370 ppt
PFBS	420 ppt
PFHxA	400, 000

PFAS Site Investigation

Ann Emington, EGLE
PFAS Investigation Site Lead
231-429-1395
EmingtonA@Michigan.gov

What's New Since We Last Met

- Remedial Investigation results received from the Cherry Capital Airport and USCG.
- Municipal water connections complete and residential wells abandoned.



PFAS and Health

Rosa Jaiman, Toxicologist

Michigan Department of Health and Human Services (MDHHS)

517-331-1049

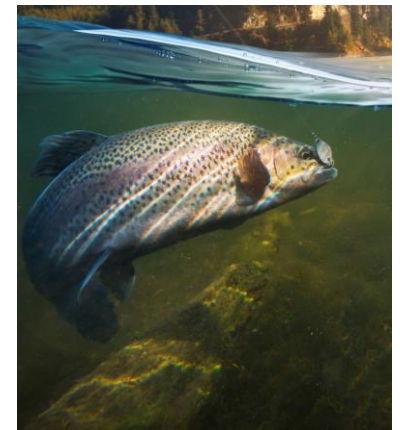
JaimanR@Michigan.gov

The Role of MDHHS/ Local Health Department (LHD)

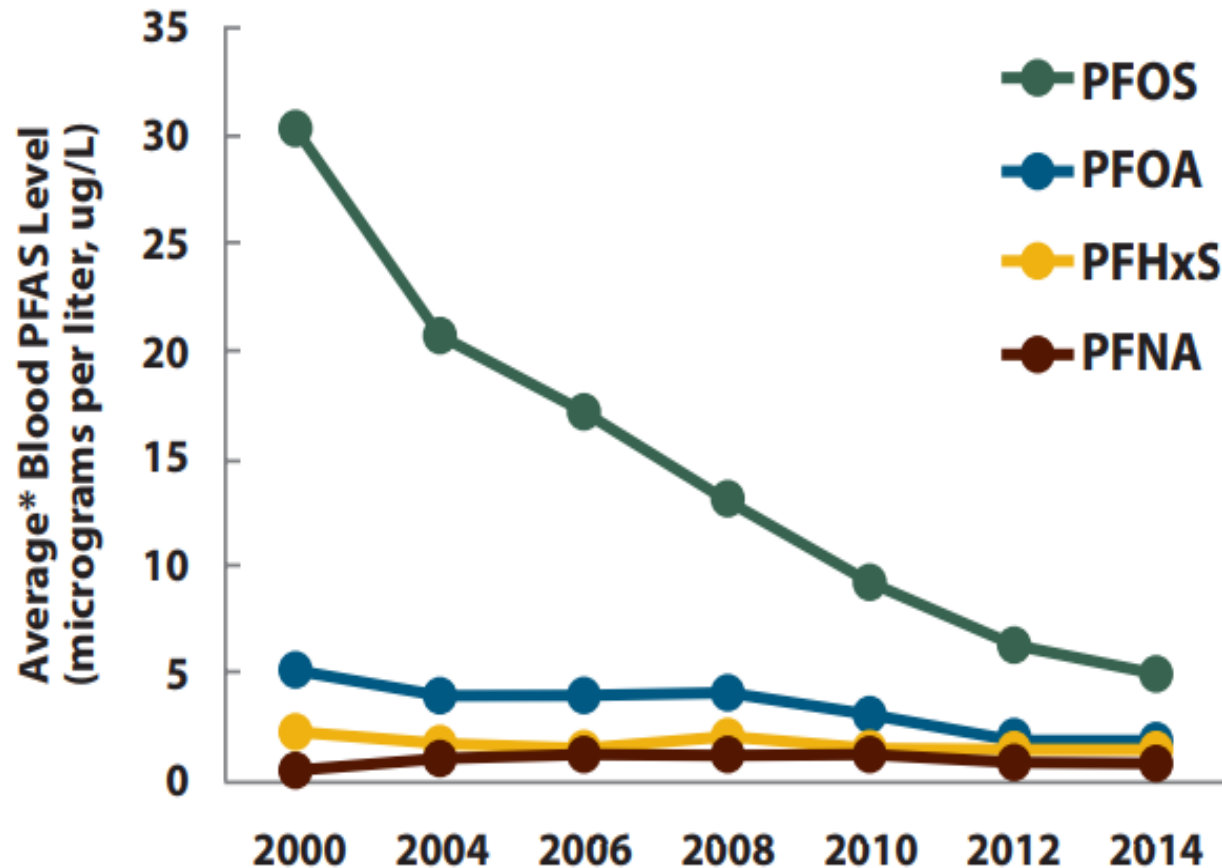
- Understand the health concerns facing your community
- Develop a plan to investigate and address health risks
 - EGLE leads the site investigation
 - MDHHS and the Local Health Department lead the public health planning and response
- Evaluate PFAS exposures to residents in the community
 - Recommend public health actions as needed

Exposure to PFAS Chemicals

- Drinking contaminated water
- Eating fish caught from water contaminated by PFAS
 - “Eat Safe Fish” Guidelines
- Incidental swallowing of contaminated soil or dust
- Eating food packaged in materials containing PFAS
- Using some consumer products
- PFAS absorption through skin is typically not a concern



Blood levels of the most common PFAS in people in the United States 2000-2014



* Average = geometric mean

Data Source: Centers for Disease Control and Prevention. Fourth Report on Human Exposure to Environmental Chemicals, Updated Tables, (January 2017).

Associated Human Health Outcomes PFOA and/or PFOS

- Reduced fertility
- High blood pressure or pre-eclampsia in pregnant women
- Small decreases in infant birth weight
- Higher cholesterol
 - Especially total cholesterol and LDL cholesterol

Associated Human Health Outcomes PFOA and/or PFOS

- Thyroid disease
- Liver damage
- Decreased immune system response to vaccines
- Developing certain types of cancer
 - In particular, kidney and testicular cancers*

* PFOA only

A Collaborative Solution to PFAS-Contaminated Drinking Wells Through Connection to a Municipal Water System



Beth Friend
East Bay Township Supervisor
231-947-8719
bfriend@eastbaytwp.org

ORIGINAL SCENARIO:

18 homes in a modestly-priced subdivision are determined to have PFAS-contaminated drinking wells

SOLUTIONS:

- 1) Immediately worked to design and bid a project with Matt's Underground Utility Services as the successful contractor.
- 2) Collaborated with EGLE, Grand Traverse County and its Brownfield Redevelopment Authority to establish funding to cover the cost of municipal water connection and well-abandonment for all 18 homes.

\$150,000 in Alternative Water Supply Grant Agreement through EGLE

\$ 85,000 in Brownfield Redevelopment Authority funding through Grand Traverse County

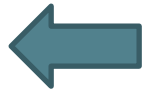
ACTIONS:

Matt's Underground Utility Services...

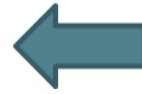
- ✓ Notice to Award issued on February 1, 2021
- ✓ Notice to Proceed issued on February 17, 2021
- Contractor on-site February 19, 2021 for work to begin February 22, 2021
- ✓ All 18 homes connected by March 19, 2021
 - ❖ 19 wells no longer in operation, as one home had an additional separate well for irrigation.
 - ❖ 17 wells capped; 2 wells rendered useless through capping service lead, these wells located under house.
- ✓ Restoration and hydro-seeding completed the week of March 29, 2021

REMAINING ACTIONS:

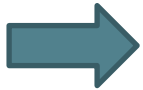
Submit expenses to funding agencies for reimbursement.



Well with
cap removed.



Pulling the
drop pipe
by hand.



Pulling bail
attached
to well
drop pipe.



Exposing the
drop pipe
and interior
portion of the
pitless adapter.



Well head and
pitless adapter
casing removed;
well filled with
Bentonite.



- Executive Director, PFAS Action Response Team
- PFAS Operations Manager
- Senior Geologist, Remediation and Redevelopment Division
- Contamination Investigation Program, Drinking Water and Environmental Health Division



- Board of Trustees
- Supervisor
- Engineer of Record: Wade Trim, Inc.
- Legal Counsel: Young, Graham, & Wendling, PC



- Board of Commissioners
- Brownfield Redevelopment Authority
- County Administration
- Health Department – Environmental Health Division
- Department of Public Works



Summary of Site Investigation USCG Air Station Traverse City

Gregory O. Carpenter
U.S Coast Guard
Chief of Environmental Compliance
District Five and District Nine
gregory.o.carpenter@uscg.mil
216-902-6219

Summary of Site Investigation - USCG Air Station Traverse City

- PFAS detected in groundwater collected from soil borings on USCG property
- PFOS detected in soil samples collected from beneath the tarmac and near the retention pond
- PFAS extent is not delineated laterally
 - The aquifer is believed to be bounded vertically by underlying clay unit
- Potential source areas:
 - USCG: Hangar area, retention pond, and storm sewer
 - Cherry Capital Airport
 - Groundwater impacts observed along the upgradient USCG property boundary
 - Chemical data suggests upgradient PFAS impacts originated from a different source than impacts identified downgradient of the hangar
- Additional investigation is needed to define extent of contamination and evaluate additional potential sources areas

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

REGIONAL SETTING



EAST GRAND TRAVERSE BAY

2020 EOLE VAS Borings

LEGEND

GW SAMPLE LOCATIONS WITH MAXIMUM CONCENTRATIONS OF PFOS, PFOA, PFHxS, OR PFNA IN GROUNDWATER (COMPOUND WITH THE HIGHEST VALUE IS SHOWN):

- < MICHIGAN CRITERIA
- > CRITERIA ≤ 100 ng/L
- > 100 ng/L ≤ 1,000 ng/L
- > 1,000 ng/L ≤ 10,000 ng/L
- >10,000 ng/L

USCG ASTC PROPERTY BOUNDARY

POTENTIAL CHERRY CAPITAL AIRPORT AFFF RELEASE AREAS

PRIVATE WELL LOCATION

Key Takeaways

- One or more of the following PFAS exceeds criteria at 11 of 12 boring locations:
 - PFOS
 - PFOA
 - PFNA
 - PFHxS
- PFAS above criteria identified both upgradient and downgradient of the hangar



VAP-07

VAP-06

VAP-05

VAP-04

VAP-03

VAP-01

Approximate
Flow Direction

FSS PUMPHOUSE

OIL/WATER
SEPARATOR

HANGAR

VAP-02

RETENTION
BASIN

Airport Access Rd

Stultz Dr

VAP-08

VAP-09

VAP-10

VAP-11

VAP-12

LEGEND

- MANHOLE/CATCH BASIN
 - UNDERGROUND UTILITY
 - - - - - ASTC PROPERTY BOUNDARY
 - ▨ AFFF RELEASE AREA
- COMPARISON OF PFAS GW RESULTS
TO EGLE DW MCLs:
- NO EXCEEDANCES
 - EXCEEDS EGLE DW MCL



UNITED STATES COAST GUARD
AIR STATION TRAVERSE CITY
TRAVERSE CITY, MICHIGAN

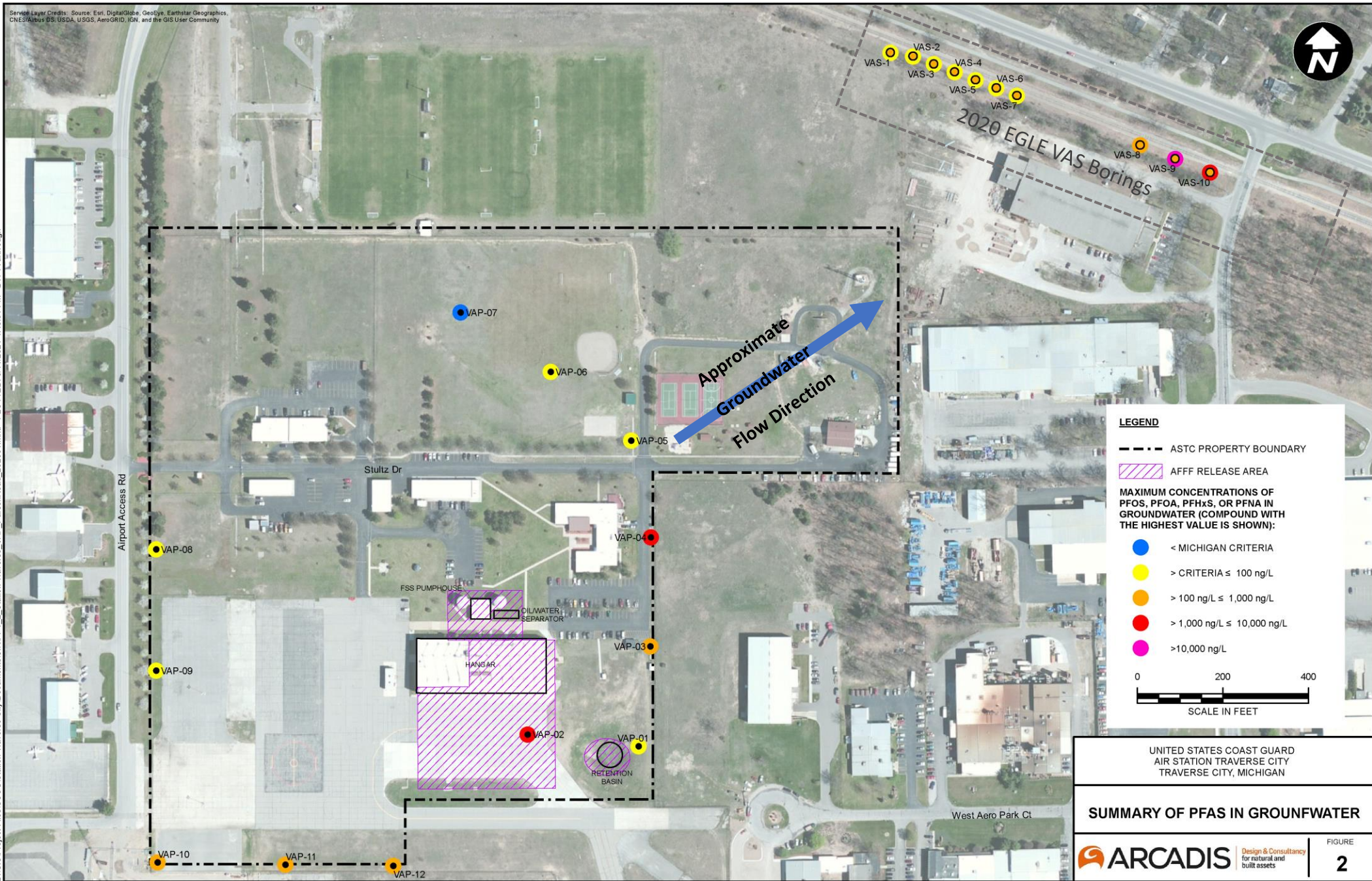
SUMMARY OF GROUNDWATER SAMPLES EXCEEDING MICHIGAN CRITERIA

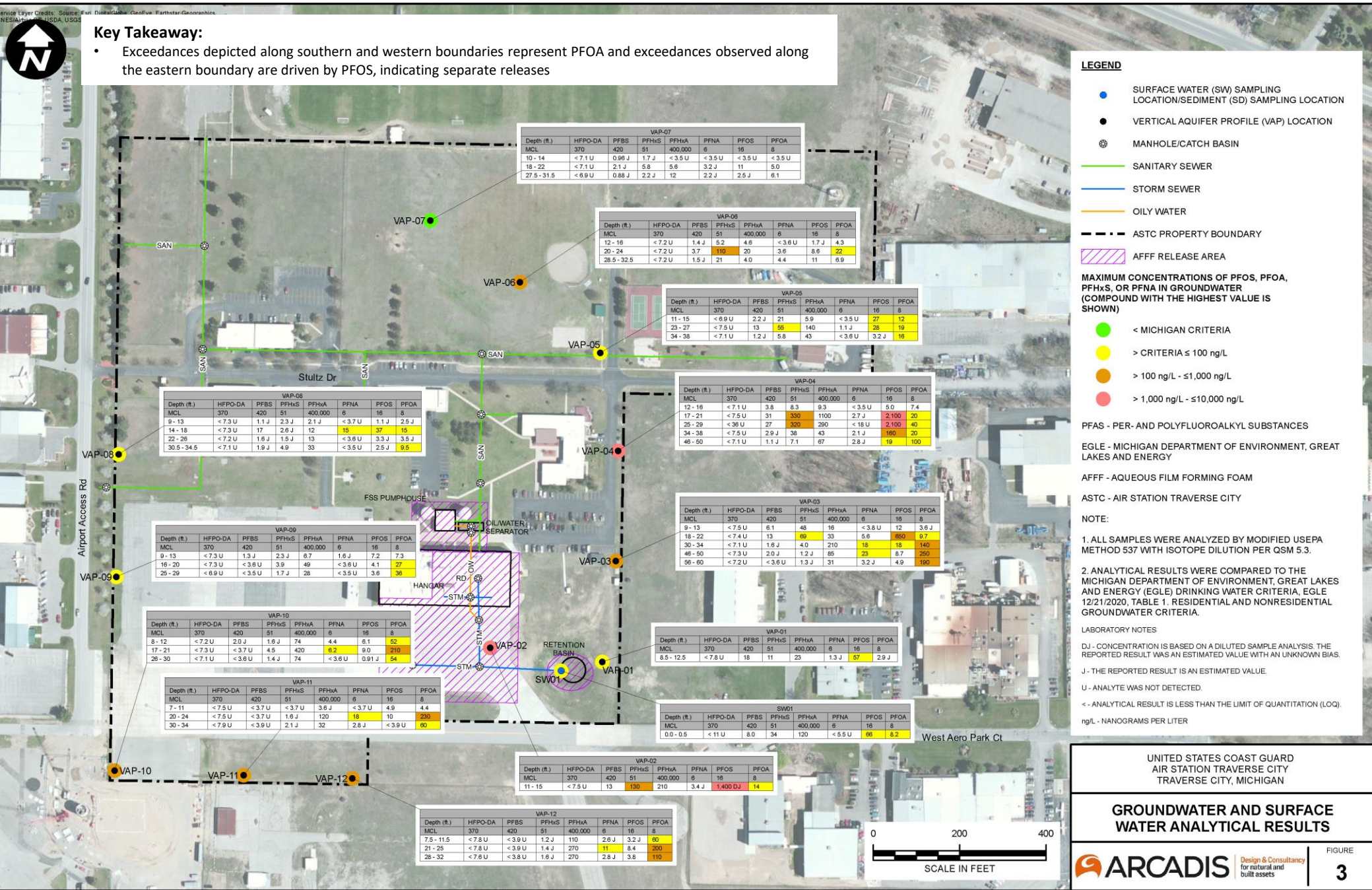
ARCADIS

Design & Consultancy
for natural and
built assets

FIGURE
1

CITY: NOV, MI DIV: ENV, DB, TRY, PC: PM, TM: TR, PROJECT NUMBER: COORDINATE SYSTEM: NAD 1983 StatePlane Michigan Central FIPS 2112 Feet
D:\GIS\Project Files\USCG\Station Traverse City\Documents\SURPPT_1 Station Traverse VAP_202001.mxd PLOTTED: 3/11/2021 4:26:06 PM BY: T. Farrough







SOIL AND SEDIMENT ANALYTICAL RESULTS

REGIONAL SETTING



EAST GRAND TRAVERSE BAY

Approximate
Groundwater
Flow Direction

2020 EGLEVAS Borings

LEGEND

GW SAMPLE LOCATIONS WITH
MAXIMUM CONCENTRATIONS OF
PFOS, PFOA, PFHxS, OR PFNA IN
GROUNDWATER (COMPOUND WITH
THE HIGHEST VALUE IS SHOWN):

- < MICHIGAN CRITERIA
- > CRITERIA ≤ 100 ng/L
- > 100 ng/L ≤ 1,000 ng/L
- > 1,000 ng/L ≤ 10,000 ng/L
- > 10,000 ng/L

--- USCG ASTC PROPERTY BOUNDARY

POTENTIAL CHERRY CAPITAL
AIRPORT AFFF RELEASE AREAS

PRIVATE WELL LOCATION

Path Forward

1. Received and reviewing airport data
2. Coordinate with Airport and EGLE on next steps
3. Additional investigation
 - Delineation required to meet regulatory standards
 - Fully evaluate risk
4. Submit final SI/PA report – April 2021

Per & Polyfluoroalkyl Substance (PFAS) Investigation Cherry Capital Airport

Kevin Klein, Airport Director
(231) 947-2250



Adam Segerlind, Project Manager



Cherry Capital Airport's Environmental Commitment

The history of Cherry Capital Airport in Traverse City began in 1935. As a key gateway to northern Michigan for travelers from near and far, the Airport has continued its focus on bringing those from other parts of the country to experience the sights and sounds that envelop Traverse City and its surrounding communities. Pristine lakes, dune lined shores, vineyards, orchards, and picturesque small towns are just a few of the things that make the area special.

Part of Cherry Capital Airport's commitment to sharing the beauty of our region with others is to also remain cognizant of our environment, to ensure those within our community remain safe and healthy. Our pride runs deep in being a key conduit in connecting families and friends to destinations worldwide, while providing an avenue for those that may be living elsewhere to return to a place that they still call home.

Doug DeYoung – Northwestern Regional Airport Commission Chair

Links:

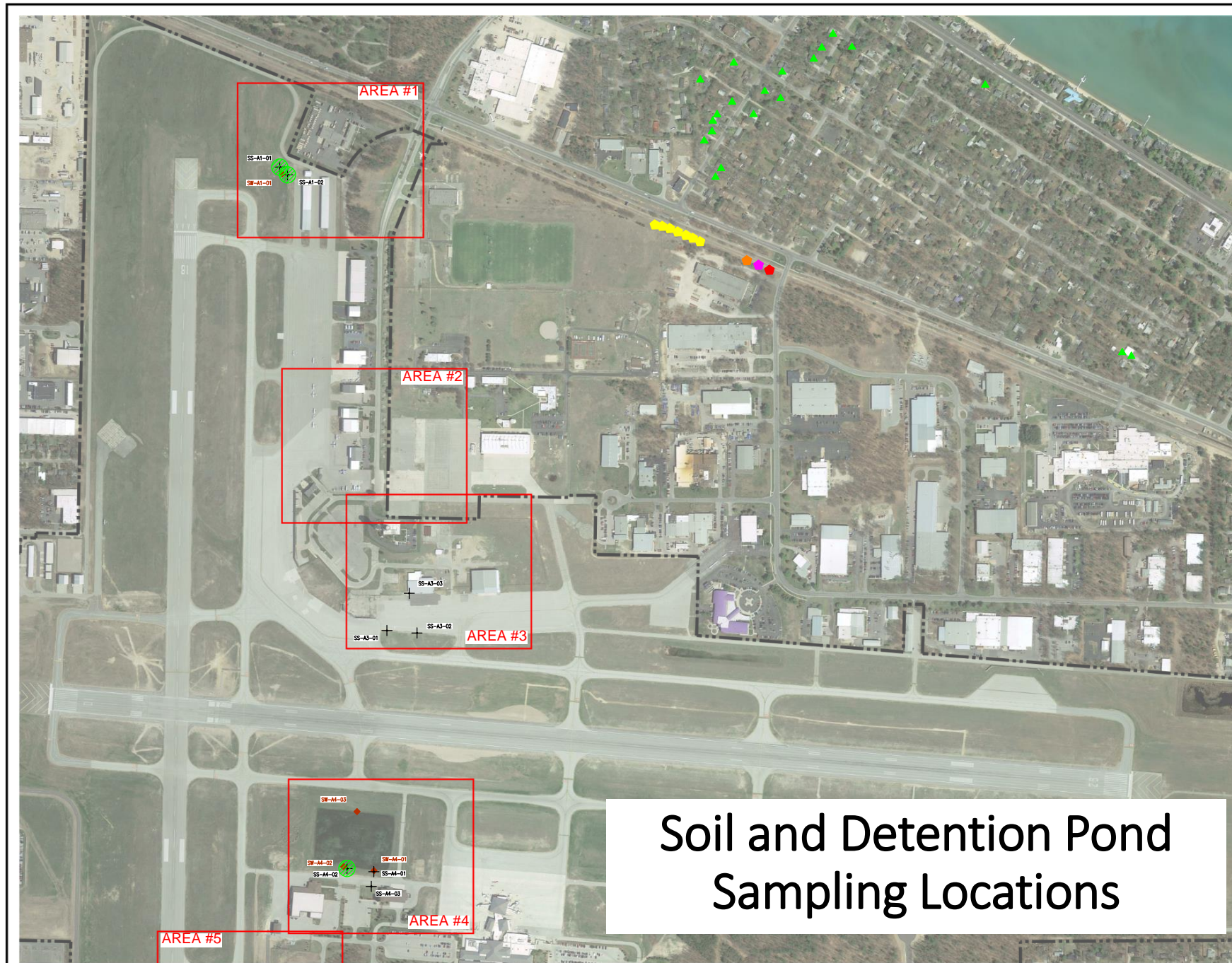
Cherry Capital Airport's Environmental Commitment: PFAS

[COVID-19](#)[Planning,
Environmental &
Zoning](#)[Airport Commission /
Annual Report](#)[Public Notices](#)[News & Awards](#)[Media Inquiries](#)[TV Commercials](#)

<https://tvcairport.com/>

Summary of Site Investigation – Cherry Capital Airport

- PFAS detected in groundwater collected from monitoring wells on airport property
- PFOA detected above criteria in soil samples collected from Areas 1 & 4
- PFAS extent is not delineated laterally or vertically
 - The aquifer is believed to be bounded vertically by underlying clay unit
- Potential source areas:
 - Current and Former Aircraft Rescue and Fire Fighting buildings
 - Training areas
 - Aircraft maintenance areas
 - Historic operations by US Navy, City of Traverse City, and Airport
- Additional investigation is needed to define extent of contamination
- Data and reports are available on the Cherry Capital Airport website (tvcairport.com)



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GEOTECHNICAL
CONSTRUCTION SERVICES
DRILLING
LANDSCAPE ARCHITECTURE

No.	Date	Revised	By

**SURFACE WATER AND SOIL SAMPLE LOCATIONS
PFAS ASSESSMENT
CHERRY CAPITAL AIRPORT (TVC)**

Date Issued: 04/12/2023
Date Surveyed: J
Designed By: J
Drawn By: J
Checked By: J
Scale: 1" = 300'
Original sheet size is 22x34
Location: T.27 N. R.10 W. & T.27 N. R.11 W., GARFIELD & EATS BAY TOWNS, CITY OF TRAVERSE CITY, GRAND TRAVERSE COUNTY, MICHIGAN
Project Number: 2020630002.00
Sheet: 1

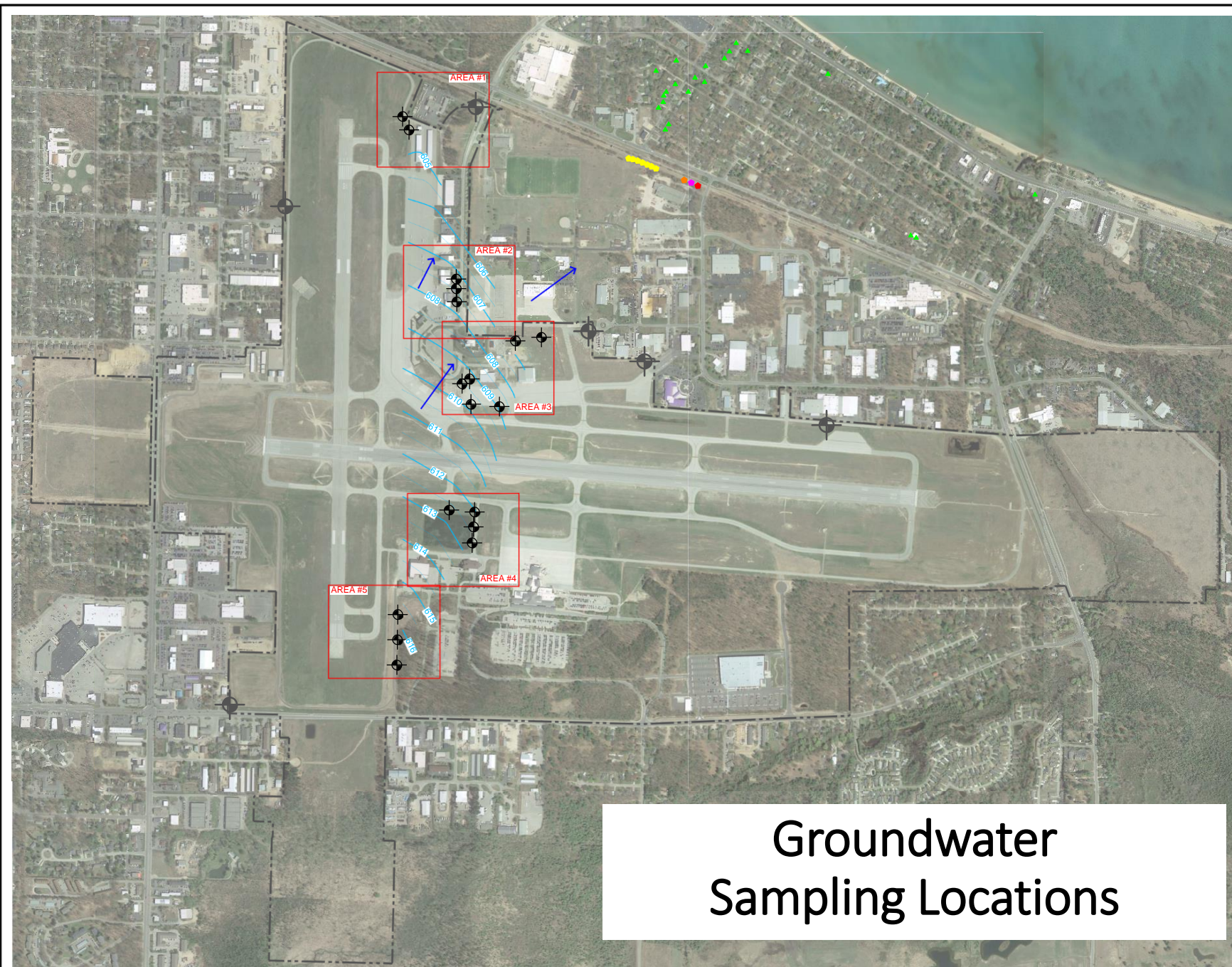
LEGEND

- SOIL SAMPLE LOCATION, OCT. 2020
- DETENTION POND SAMPLE LOCATION, OCT. 2020
- SOLE GEOPHYSICAL SURFACE WATER SAMPLING LOCATION, SEPT. 2020
- PRIVATE WATER WELL LOCATION (AS PROVIDED BY GMA, OCT. 2020)
- SOIL PFCA CONCENTRATION EXCEEDANCE (AS PROVIDED BY GMA, OCT. 2020)

SCALE 1" = 300'

0 300' 600'

THIS MAP IS INTENDED TO SHOW THE APPROXIMATE WELL LOCATIONS WITH RESPECT TO BOUNDARY AND OTHER SITE FEATURES. THE EXISTING WELL LOCATION DATA HAS NOT BE USED TO DETERMINE THE LOCATION OF BOUNDARY, BOUNDARY ELEVATION, OR OTHER FEATURES OF THE SITE. THIS MAP IS FOR GENERAL INFORMATION ONLY.



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1280 Business Park Dr.
Traverse City, Michigan
231-946-0191 phone
info@goslingczubak.com
www.goslingczubak.com

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LANDSCAPE ARCHITECTURE

No.	Date	Revised	By

**MONITORING WELL LOCATIONS
PFAS ASSESSMENT
CHERRY CAPITAL AIRPORT (TVC)**

LEGEND

- MONITORING WELL INSTALLED IN MARCH 2021
RESULTS NOT YET AVAILABLE
- SOLE OFFSHORE VERTICAL ADAPTER
SAMPLING LOCATION, SEPT. 2020
- PNEUMATIC WATER WELL LOCATION
(AS PRESENTED BY DAK, OCT. 2020)
- GROUNDWATER PNEUMATIC SURFACE,
DEC. 2020

SCALE 1" = 500'
0 500' 1000'

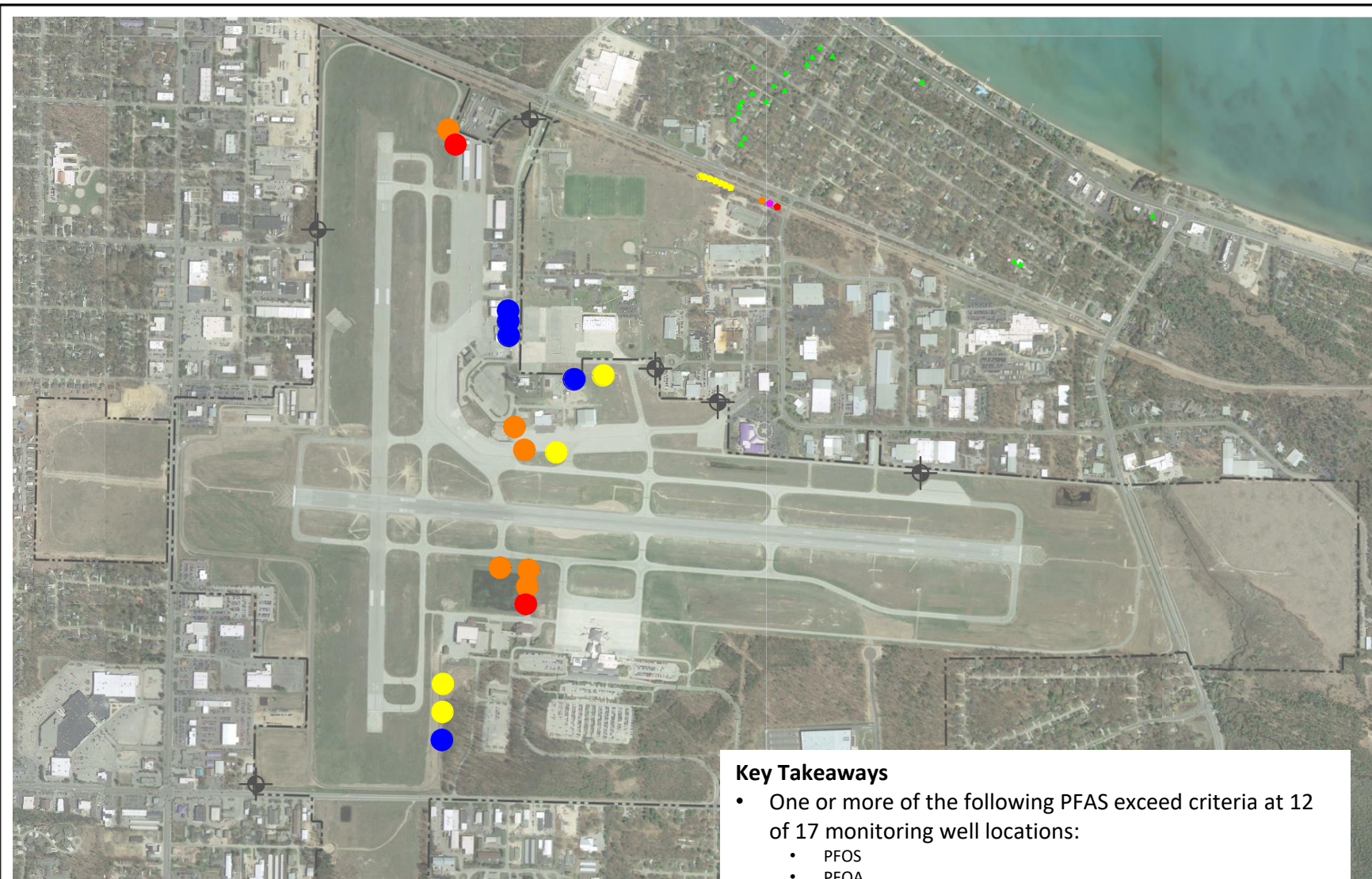
THIS MAP IS INTENDED TO SHOW THE APPROXIMATE WELL LOCATIONS WITH RESPECT TO BOUNDARY AND OTHER SITE FEATURES. THE EXACTING WELL LOCATION SHALL BE USED TO DETERMINE THE LOCATION OF OTHERS. BOUNDARY LOCATIONS, OF COURSE, SHOULD BE DETERMINED BY THE SITE. THIS SITE MAP IS FROM SCALE 1:5000.

Date Issued: 04/12/2021
Date Surveyed:
Designed By:
Drawn By: J. AEB
Checked By:
Scale: 1" = 500'
Original sheet size is 22x34

Location: T.27 N. R.10 W. & T.27 N. R.11 W., GARFIELD & EATS BAY TOWNS, CITY OF TRAVERSE CITY, GRAND TRAVERSE COUNTY, MICHIGAN

Project Number: 2020630002.00

Sheet: 2



Groundwater Sample Results Summary

Key Takeaways

- One or more of the following PFAS exceed criteria at 12 of 17 monitoring well locations:
 - PFOS
 - PFOA
 - PFNA
- PFAS above criteria identified downgradient at 4 of 5 suspected source areas
- Current data set does not horizontally or vertically delineate groundwater impacts

GROUNDWATER MONITORING WELL SAMPLE RESULTS FROM DECEMBER 2020. MAXIMUM CONCENTRATIONS OF PFOS, PFOA, PFHxS, OR PFNA IN GROUNDWATER (COMPOUND WITH HIGHEST CONCENTRATION IS SHOWN):

- GROUNDWATER MONITORING WELL RESULTS LESS THAN MICROBIAL CRITERIA
- GROUNDWATER MONITORING WELL RESULTS > CRITERIA, ≤100 ng/L
- GROUNDWATER MONITORING WELL RESULTS >100, ≤ 1,000 ng/L
- GROUNDWATER MONITORING WELL RESULTS >1,000, ≤ 10,000 ng/L
- GROUNDWATER MONITORING WELL RESULTS >10,000 ng/L
- MONITORING WELL RESAMPLED IN MARCH 2021 RESULTS NOT YET AVAILABLE
- SOLE GEOPHYSICAL VERTICAL AUGER SHELTER LOCATION, SEPT. 2020
- POTENTIAL WELLS LOCATION (AS PROVIDED BY E&E, OCT. 2020)

SCALE 1" = 500'

THIS MAP IS INTENDED TO SHOW THE APPROXIMATE WELL LOCATIONS WITH RESPECT TO BUILDINGS AND OTHER SITE FEATURES. THE EXACT WELL LOCATION SHALL BE USED TO DETERMINE THE LOCATION OF OTHER, MAJOR ELEMENTS, STRUCTURES, OR OTHER FEATURES OF THE FACILITY AT THE SITE. THIS MAP IS FROM SEATTLE, WASH. STATE.

LEGEND

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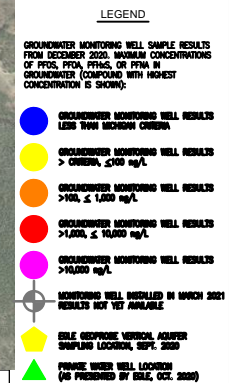
SUMMARY OF GROUNDWATER RESULTS PFAS ASSESSMENT CHERRY CAPITAL AIRPORT (TVC)

Date Issued: 04/12/2021
Date Surveyed:
Designed By:
Drawn By: JF
Checked By: AEB
Scale: 1" = 500'
Original sheet size is 22x34
Location: T 27 N, R 10 W & T 27 N, R 11 W, GARFIELD & EATS BAY TOWNS, CITY OF TRAVERSE CITY, GRAND TRAVERSE COUNTY, MICHIGAN
Project Number: 2020630002.05
Sheet: 3



- PFOA concentrations were higher than PFOS concentrations in all but 2 sample locations.
- Highest PFOA concentration observed in Area 4 at 3,050 ppt; PFOS at this location was 146 ppt.
- Highest PFHxS concentration observed in Area 4 at 25.1 ppt.
- Different constituent make-up than observed in USCG results
- Additional investigation needed to delineate horizontal and vertical extents

Groundwater Analytical Results



**PFAS ANALYTICAL RESULTS
PFAS ASSESSMENT
CHERRY CAPITAL AIRPORT (TVC)**

Date Issued: 04/12/2021
 Date Surveyed:
 Designed By:
 Drawn By: jr
 Checked By: AES
 Scale: 1" = 500'
 Original sheet size is 22x34
 Location:
 T 27 N, R 10 W & T 27 N, R 11 W,
 GARFIELD & EATS BAY TOWNSHIPS,
 CITY OF TRAVERSE CITY,
 GRAND TRAVERSE COUNTY,
 MICHIGAN
 Project Number:
 2020630002.05

NOTES: The analytes listed have an EGLE Residential Drinking Water Criteria.
The analytes are acronym designations for PFAS (per- and poly-fluoroalkyl substances).
Analysis was by EPA Method 537 Modified Isotope Dilution.
Grey shaded values are above the laboratory detection limit.
Yellow highlighted values exceed residential drinking water criteria.
The detection limit follows the less-than symbol.

ANALYTE	Residential Drinking Water Criteria (12/21/2020) ng/L
HFPO-DA	31
Perfluorobutanesulfonic acid (PFBS)	42
Perfluorohexanesulfonic acid (PFHxS)	5
Perfluorooctanoic acid (PFHxA)	400.00
Perfluorononanoic acid (PFNA)	
Perfluorooctanesulfonic acid (PFOS)	1
Perfluorotetrafluoroacetic acid (PFOA)	

THIS IMAGE IS INTENDED TO SHOW THE APPROXIMATE WELL LOCATIONS WITH RESPECT TO BUILDINGS AND OTHER SITE FEATURES. THE MONITORING WELL LOCATION IMAGE SHOULD NOT BE USED TO DETERMINE LOCATIONS OF UTILITIES, BUILDING ELEMENTS, TOPOGRAPHY, OR OTHER PROPOSED OR EXISTING FEATURES OF THE SITE. THIS SITE IMAGE IS FROM GOOGLE AERIAL IMAGERY.

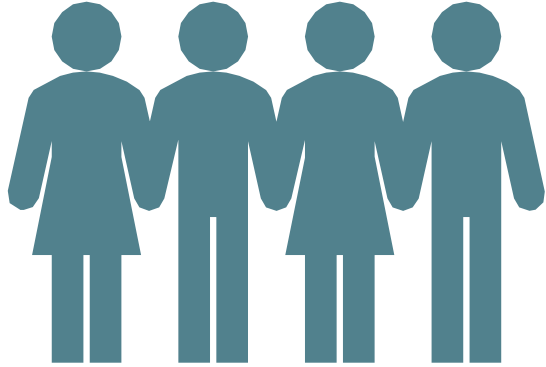
Path Forward

1. Coordinate with USCG and EGLE on next steps
2. Additional investigation
 - Delineation required to meet regulatory standards
3. Fully evaluate clean-up needs and options, as necessary

EGLE Next Steps

- Residents within the Pine Grove subdivision should notify EGLE if they have irrigation wells on their property.
- EGLE will continue to review data generated from additional investigations by United States Coast Guard and Cherry Capital Airport.
- EGLE will recommend additional investigation and cleanup as necessary to protect human health and Grand Traverse Bay.
- EGLE will continue to share information with the public on these investigations through the MPART website and through future public meetings.

Citizens Advisory Workgroup



- Residents From Impacted Communities
- Key Charges:
 - Recommend How to Engage and Empower Communities
 - Recommend How to Educate the General Public

MICHIGAN PFAS ACTION RESPONSE TEAM (MPART)

www.Michigan.gov/PfasResponse



MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY



How to ask a question in Zoom



Submit your questions using the “**Q/A**” box in at the bottom of your screen.



Click the “hand” icon at the bottom of your screen.



Type #2 to raise your hand.

#2